



Effects of Rational Emotive Behavior Therapy (REBT) Intervention Program on Mental Health in Female College Students

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ABSTRACT

This study tested the efficacy of an 8-weeks Rational Emotive Behavior Therapy (REBT) programme on adjusted irrational beliefs and mental symptoms. The sample of 60 female college students was randomly assigned to a REBT (n = 25) and non-REBT group (n = 35). We expected increase mental symptoms in the non-REBT group, but not in the REBT group, due to the REBT programme intervention. According to our data, adjusted irrational beliefs increased in the REBT group but remained unchanged in the non-REBT group. Even a REBT programme intervention of 8-sessions can protect female college students from an increase in mental symptoms during the university period.

Key Words: Rational Emotive Behavior Therapy, Intervention, Mental Health, Female Students

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Introduction

Diagnosis of mental disorders and its effective factors among students is important because it prevents the success, academic achievement and achieving a high status of progress (Auerbach *et al.*, 2016). The prevalence of mental illness among students is increasing (Pedrelli *et al.*, 2015). The results of a 13-year longitudinal study indicated that today students more go to university counseling centers than before, and their problems also have been more complicated (Benton *et al.*, 2003).

Entrance to university, as a very sensitive grade, creates a major change in social, family and personal life, and during this period, the individuals face a lot of changes in lifestyle, nutrition and social relationships (Tabatabaei *et al.*, 2017). Studies show that prevalence and severity levels of mental problems among students are higher than prevalence and severity

levels of non-students samples (Sadeghian and Heidarian Pour, 2009; Shanshan and Zichao, 2017). Conditions such as lack of familiarity of many students with a campus at the time of arrival, separation from family, incompatibility with other people in the living environment, lack of well-being and economic facilities, and on the other hand, smoking and other addictions among students can cause mental disorders and dysfunction (Alizadeh-Navaei and Hosseini, 2014).

Cognitive-behavioral therapy is one of the ways to treat mental disorders (Cordioli and Knapp, 2008). Many studies used cognitive-behavioral therapies in various demographic groups. Cognitive therapies include Rational-Emotive-Behavior Therapy (REBT) and Reality Therapy (RT). Elis (2005), as the founder of REBT, believes that mental illness comes from inappropriate thoughts, and the elements

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that make up these thoughts are irrational beliefs. He states that these beliefs are irrational, non-experimental and non-functional and do not confirm the realities of people's lives and cause emotional and behavioral harm. Marianne (1979) in a study using Ellis's rational-emotional treatment on high school male students showed that this method reduces students' anxiety. Many studies have confirmed that REBT has a positive effect on behavioral disorders, such as depression in university populations (Fosterling, 1985), depression related to life problems in normal populations (Malouff *et al.*, 1988), and clinical depression symptoms in clinical settings such as obsessive-compulsive disorder (Fava *et al.*, 1994). Conway (1999) showed the effectiveness of the cognitive-behavioral therapy program in reducing symptoms of depression and improving school performance in four groups of depressed teenagers in grades nine to twelve. According to Maultsby *et al.*, (1974), DiGiuseppe *et al.*, (1997) showed that rational-emotional education is effective on non-clinical populations, including children and adolescents. They also found that children who participated in the rational-emotional education program were able to learn the concepts of REBT and adjust their irrational beliefs. In this regard, Watter (1998) concludes that elementary school students who participated in the rational-emotional education program have decreased their anxiety levels, and their self-esteem and failing tolerance have increased. He states that generally these trainings increase the effective skills of these types of students in confronting and dealing with emotional situations, and this type of education, in contrast to the Freudian theory of education, helps to reduce irrational beliefs and mischievous emotions.

Based on an experimental intervention study, the aim of this study is to test the effects of a REBT programme on perceived mental symptoms for female college students. As an indicator of perceived mental symptoms, we used the variables physical complaints, obsession and compulsion, hypersensitivity to interactions, depression, anxiety, aggression, painful fear, paranoid thoughts, and psychosis (Fosterling, 1985; Malouff *et al.*, 1988; Fava *et al.*, 1994) to examine this effect. Furthermore, we included adjusted irrational beliefs as an important behavior-related outcome variable (Jones, 1968; Al-Heeti *et al.*, 2012).

Growing mental problems are expected to lead to an increase of physical complaints, obsession and compulsion, hypersensitivity to interactions, depression, anxiety, aggression, painful fear, paranoid thoughts, and psychosis during the university period. REBT programme is thought to prevent such an increase. We hypothesized that (1) physical complaints, obsession and compulsion, hypersensitivity to interactions, depression, anxiety, aggression, painful fear, paranoid thoughts, and psychosis will increase in the non-REBT group, but not in the REBT group, (2) adjusted irrational beliefs should increase in the REBT group, but remain unchanged or even decrease in the non-REBT group.

Methods

Participants

Students were recruited through two Chinese universities (both coeducational) following an initial approach to five Chinese universities in Beijing. Students of these universities they thought would benefit from this study were nominated by counsellors and were invited to participate in this study.

Seventy-one students provided consent to participate. Only five male students agreed to participate, and we excluded these students from our analyses to allow this report to focus only on female students. The participants were female students and had a mental disorder score of at least one S.D. above the population mean on any subscale of the Symptom Checklist-90-Revised (SCL-90-R). They also had an experience of at least one type of depression within the last 20 days. We excluded the students who had a serious physical illness requiring treatment (such as cancer). Six students have not reported significant symptoms of mental disorder, and they were not included.

Our sample consisted of 60 female students with a mean age 22 years. Overall, 20% of students were studying management ($n = 12$), 25% psychology ($n = 15$), 22% medicine ($n = 13$), and 33% other subjects ($n = 20$).

Procedure

Based on educational grade, the female students were assigned into groups of one to eight participants. They were randomly assigned to a non-REBT group ($n = 35$) and a REBT group ($n = 25$) using a predetermined computer-generated



sequence. Assessments were undertaken at before/after the REBT program for the REBT program condition. Students completed the scales adjusted irrational beliefs, physical complaints, obsession and compulsion, hypersensitivity to interactions, depression, anxiety, aggression, painful fear, paranoid thoughts, and psychosis. There was no drop out.

Intervention program

Students received the REBT program sessions for 1 day a week for 35–45 min/day over 8 weeks during 2015. The REBT and non-RET groups were conducted in universities during university hours. The most important educational materials during the sessions were to become familiar with Ellis's irrational beliefs as a rational-emotional-behavioral therapist. Through student participation in group discussions associated with a number of beliefs, the trainers tried to make their views about accepting or rejecting the materials. In addition, a number of assignments were given to the students at the end of each training session so that they could be discussed at the next meeting of the group consultation and make the necessary conclusions. The form of group counseling is as follows: Session 1, introducing members to the group; session 2, the expression of the first irrational belief 'confirmation by others absolutely' and introducing the second irrational belief 'very human being should be efficient, responsible and successful in any situation'; session 3, reviewing the assignments given in the previous session, introducing the third irrational belief 'some people are evil and they must be severely punished' and the fourth irrational belief 'disaster in the absence of progress in accordance with the wishes of that person'; session 4, introducing the fifth irrational belief 'the origins of all events are outside the individual'; session 5, introducing the sixth irrational belief 'strongly think for any possible risk and discard all normal daily activities' and the seventh irrational belief 'avoiding dealing with problems instead of remedies'; session 6, introducing the eighth irrational belief 'paying too much attention to the past time and the importance of what happened at that time' and the ninth irrational belief 'disaster occurrence in the absence of a solution to the realities of life'; session 7, introducing the tenth irrational belief 'escape from responsibility and lack of commitment and turning to laziness as a

pleasure of life'; session 8, summarizing the treatment and follow up the previous sessions and necessary strategies.

Data collection procedures

We solicited a consecutive sample from psychiatric clinic centers in Southern China. After admission to the psychiatric clinic centers and on the third day, our participants were familiarized with the clinic environment, and we explained our purposes and procedure. We assessed the participants by the BAIQ and their disease history (mental, obsessive-compulsive, etc.). We randomly assigned the participants into the inclusion criteria to either a neurofeedback group or an active control group. We collected data for time 1 the five day after admission to the psychiatric clinic centers. Data for time 2 were collected four days after the training.

Intervention

The intervention was a 7-weeks neurofeedback training programme designed to complement advice provided by the company Thought Technology. We developed a kind of self-regulation in participants using the recording of electrical brain waves and giving feedback to them. We put sensors called electrodes on the patient's scalp. The sensors recorded the brain's electrical activity of participants and showed it in the form of brain waves, mostly simulated in the form of a computer game or video. Video playback or computer game guidance was performed without the use of hands and only with brainwaves. In this way, the individual found the favorable or unfavorable conditions of their brain waves by seeing progress or stopping the game, getting bonuses, losing points or changes created in sound or movie playback, and tried to modify the state of his brainwaves by directing the game or the movie.

Measures

Mental symptoms

The scale mental symptoms is a 90-item questionnaire (SCL-90-R) that screens for physical complaints, obsession and compulsion, hypersensitivity to interactions, depression, anxiety, aggression, painful fear, paranoid thoughts, and psychosis disorders among students. The reliability and validity of the scale was supported by some studies, in particular Martinez, Stillerman & Waldo (2005). We



obtained an alpha coefficient of .82 at before the REBT program and of .83 at after the REBT program.

Adjusted irrational beliefs

The scale adjusted irrational beliefs is a 40-item questionnaire (IBQ-40) that screens for irrational thoughts (Jones, 1968; Al-Heeti, Hamid & Alghorani, 2012). The reliability and validity of the scale was supported by some studies. We obtained an alpha coefficient of .77 at before the REBT program and of .81 at after the REBT program.

Statistical analyses

We used a mixed model two-way ANOVA to examine changes in physical complaints, obsession and compulsion, hypersensitivity to interactions, depression, anxiety, aggression, painful fear, paranoid thoughts, and psychosis disorders with the REBT programme relative to the non-REBT condition.

Results

Sixty (100%) female students completed the questionnaires at before and after the REBT programme. There were no differences concerning students' age, family annual household income, or prior grade point average. The results of average scores and standard deviations of the REBT and non-REBT groups have been shown in Table 1.

Table 1 shows a significant time effect for the variables adjusted irrational beliefs, physical

complaints, obsession and compulsion, hypersensitivity to interactions, depression, anxiety, aggression, painful fear, paranoid thoughts, and psychosis. The variable adjusted irrational beliefs decreased in the non-REBT group (before the REBT programme: M = 2.33, SD = 0.51, after the REBT programme: M = 2.31, SD = 0.63), but it increased in the REBT group (before the REBT programme: M = 2.21, SD = 0.46, after the REBT programme: M = 2.62 SD = 0.74). While physical complaints increased in the non-REBT group (before the REBT programme: M = 3.19, SD = 0.73, after the REBT programme: M = 3.33, SD = 0.36), it decreased in the REBT group (before the REBT programme: M = 3.16, SD = 0.24, after the REBT programme: M = 3.02, SD = 0.27). Obsession and compulsion increased in the non-REBT group (before the REBT programme: M = 3.54, SD = 0.49, after the REBT programme: M = 3.67, SD = 0.43), but it decreased in the REBT group (before the REBT programme: M = 3.51, SD = 0.46, after the REBT programme: M = 3.41 SD = 0.61). Hypersensitivity to interactions increased in the non-REBT group (before the REBT programme: M = 2.71, SD = 0.82, after the REBT programme: M = 2.85, SD = 0.53), but it decreased in the REBT group (before the REBT programme: M = 2.68, SD = 0.37, after the REBT programme: M = 2.43 SD = 0.75). Depression increased in the non-REBT group (before the REBT programme: M = 2.95, SD = 0.48, after the REBT programme: M = 3.01, SD = 0.65), but it decreased in the REBT group (before the REBT programme: M = 2.94, SD = 0.64, after the REBT programme: M = 2.59 SD = 0.44).

Table 1. Means (and SD) of outcome measures for REBT and non-REBT conditions

Assessment measure	Condition	Before the REBT programme	After the REBT programme
Adjusted irrational beliefs	REBT	2.21 (0.46)	2.62 (0.74)
	Non-REBT	2.33 (0.51)	2.31 (0.63)
Physical complaints	REBT	3.16 (0.24)	3.02 (0.27)
	Non-REBT	3.19 (0.73)	3.33 (0.36)
Obsession and compulsion	REBT	3.51 (0.46)	3.41 (0.61)
	Non-REBT	3.54 (0.49)	3.67 (0.43)
Hypersensitivity to interactions	REBT	2.68 (0.37)	2.43 (0.75)
	Non-REBT	2.71 (0.82)	2.85 (0.53)
Depression	REBT	2.94 (0.64)	2.59 (0.44)
	Non-REBT	2.95 (0.48)	3.01 (0.65)
Anxiety	REBT	3.16 (0.43)	2.98 (0.33)
	Non-REBT	3.21 (0.55)	3.28 (0.65)
Aggression	REBT	2.71 (0.44)	2.56 (0.28)
	Non-REBT	2.70 (0.33)	2.81 (0.66)
Painful fear	REBT	3.77 (0.45)	3.63 (0.45)
	Non-REBT	3.75 (0.77)	3.79 (0.61)
Paranoid thoughts	REBT	2.11 (0.28)	2.01 (0.77)
	Non-REBT	2.13 (0.37)	2.32 (0.22)
Psychosis	REBT	2.66 (0.54)	2.52 (0.39)
	Non-REBT	2.68 (0.49)	2.83 (0.44)



Anxiety increased in the non-REBT group (before the REBT programme: $M = 3.21$, $SD = 0.55$, after the REBT programme: $M = 3.28$, $SD = 0.65$), but it decreased in the REBT group (before the REBT programme: $M = 3.16$, $SD = 0.43$, after the REBT programme: $M = 2.98$, $SD = 0.33$).

Most the female college students experienced high levels of physical complaints, obsession and compulsion, hypersensitivity to interactions, depression, anxiety, aggression, painful fear, paranoid thoughts, and psychosis sometimes and often.

Discussion

Our first hypothesis (physical complaints, obsession and compulsion, hypersensitivity to interactions, depression, anxiety, aggression, painful fear, paranoid thoughts, and psychosis will increase in the non-REBT group, but not in the REBT group) could be partially supported. As expected, while the female college students reported an increase of these variables during the university period in the non-REBT group, they reported a decrease in the REBT group. The second hypothesis (adjusted irrational beliefs should increase in the REBT group, but remain unchanged or even decrease in the non-REBT group) also could be partially supported. As expected, participants in the REBT group reported an increase of adjusted irrational beliefs, whereas the members of the non-REBT group did not.

The results of this study are consistent with the study conducted by Banks (2009) that showed REBT directly lead to decrease negative and inappropriate emotions among students and is a comprehensive intervention for children and adolescent with an emotional disorder. According to Turner (2016) that showed Rational Emotive Behavior Therapy (REBT) intervention leads to an increase in the mental health of athletes, our results support this finding. Regarding the effectiveness of cognitive-behavioral interventions not only in students but also in different demographic groups, and given the high percentage of these disorders among students, holding training courses and interventions based on this method for female and male students can lead to a reduction in mental disorders in this high-education group of society.

Our study made methodological improvements in the examination of the effectiveness of a Rational Emotive Behavior Therapy (REBT) programme on mental

symptoms. These included: the use of randomization, a non-REBT group, a rather homogeneous REBT program intervention, and a sample size of more than 24 female college students in each group. There are some limitations in this study. The female college students were not informed about the aim of the study, but the educators knew that we expected positive effects of the REBT programme on mental symptoms. Our assumption was that the educators were not able to influence the results for adjusted irrational beliefs, physical complaints, obsession and compulsion, hypersensitivity to interactions, depression, anxiety, aggression, painful fear, paranoid thoughts, and psychosis in such a differentiated way. In here, the limitation is the lack of a double-blind design. We focused on adjusted irrational beliefs, physical complaints, obsession and compulsion, hypersensitivity to interactions, depression, anxiety, aggression, painful fear, paranoid thoughts, and psychosis as dependent variables in the study. Besides these variables, the future studies should examined the impact of REBT programme intervention on academic performance. In process models of Rational Emotive Behavior Therapy (REBT), it is assumed that the use of REBT strategies leads to more adjusted irrational beliefs, which positively influences performance.

As a final note, popular literature on REBT is increasing, but there are a lot of research questions concerning the use of REBT and its effects on mental symptoms that remain open. With respect to the use of Rational Emotive Behavior Therapy (REBT) programmes, there is more need to know the effectiveness of such therapies courses. Our results show that even an 8-weeks REBT intervention can have positive effects on mental symptoms.

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